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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/406,798	09/28/1999	HIROSI TUNODA	991094	1948

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ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

MISLEH, JUSTIN P

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 01/02/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/406,798

Applicant(s)

TUNODA, HIROSI

Examiner

Justin P Misleh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. First, the Examiner accepts the amendments to the title.
2. Second, the Applicant's arguments with respect to claims 1 – 27 have been considered but are moot in view of the new grounds of rejection.
3. Third, the Examiner responds to the Applicant's arguments regarding:

Claim Rejections under 35 U.S.C. §102

The Applicant argues “Ogino [US 5 852 467] does not show the relationship between the timing of taking image and the timing of intermittently outputting data from a storage medium to a recording medium.” (Emphasis Added)

The Examiner believes that claims 1, 7, and 13 require, at least therein, a **continuous operation** and in no way require, suggest, or state therein anything regarding an **intermittent operation**, as argued by the Applicant. Moreover, to support the Examiner's contention, regarding claims 1, 7, and 13, Ogino (US 5 633 976) is introduced and described below.

Ogino discloses a digital camera (see figure 1) and a method of operating the digital camera (see figure 2). The digital camera, of Ogino, is provided with an image sensor (14), a buffer memory (22), a recording medium (26), and a CPU (30) for controlling the digital camera. The buffer memory (22), is described by Ogino in column 3 (lines 9 – 19), as consisting of a semiconductor memory for storing the output of the image sensor (14) in units of images frames (planes). The buffer memory (22) consists of 8 banks for storing a maximum of 8 image frames (M0 – M7). The recording medium (26), is described by Ogino, as a rigid disk device that may

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be replaced by any of the devices listed in column 2 (lines 19 – 31). The principle behind Ogino's disclosure is that the buffer memory (22) has a slower write speed than the write speed of the recording medium (26). Hence, Ogino states in column 3 (lines 31 – 40), that the because of the difference in write speeds the buffer memory (22) is provided with a capacity of 8 images frames (planes). However, Ogino adds therein, that the digital camera may operate in the same fashion if the write speeds of the buffer memory (22) and the recording medium (26) were the same.

In reference to the operation of the digital camera (see figure 2), Ogino focuses primarily upon a continuous shot mode (a single shot mode is also provided), wherein the image sensor (14) is operated to continuously capture images in succession at a predetermined time interval set by the CPU. The continuous shot mode is described in connection with the flowchart of figure 2. The flowchart of figure 2 can be summarized as follows: The image sensor (14) converts an optical image, provided by lens (10), into an electrical signal and then digitizes, in A/D converter (18), the electrical signal into a digital image corresponding to a single frame (plane). In the continuous shot mode, a succession of digital images is written into the empty slots of the buffer memory (22), corresponding to the 8 banks (Mo – M7), according to the write speed of the buffer memory (22). Once the buffer memory (22) is filled to capacity (i.e. all 8 banks have digital images stored therein), the stored digital images are then read out of the buffer memory (22), in succession, and written into the recording medium (26), according to the writing speed of the recording medium (26).

It is clear within Ogino that the digital images are not written into the recording medium (26) until the buffer memory (26) is filled to capacity. It is also clear within Ogino that the

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digital images are captured continuously in a continuous shot mode. Furthermore, Ogino makes note that the write speed of the buffer memory (22) is slower than the write speed of the recording memory (26). To compensate, Ogino provides lower (V1) and upper (V2) threshold values that correspond to the remaining capacity of the buffer memory (22). During operation, the remaining capacity of the buffer memory (22) is tested against the lower (V1) and upper (V2) threshold values. If the remaining capacity of the buffer memory (22) falls outside of a range between the lower (V1) threshold value and the upper (V2) threshold value, the continuous shot mode defaults to a single shot mode. Ogino provides this threshold value test, to ensure that no digital images are lost. For instance, if the predetermined time interval between shots in the continuous shot mode may be too short to accommodate the difference in write speeds between the buffer memory (22) and the recording medium (26) or may even be too short to accommodate the write speed of the buffer memory (22) alone.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 3, 4, 7, 9, 10, 13, 15, 16, 19, 21, 22, 24, 25, and 27** are rejected under 35

U.S.C. 102(b) as being anticipated by Ogino (US 5 633 976). For the following rejections, please reference the Examiner's description, interpretation, and position regarding Ogino, as described above.

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6. For **claim 1**, Ogino discloses a method for recording image (see figure 2), comprising the steps of storing image data continuously obtained by an image pickup operation (within image sensor – 14) in a storage medium (buffer memory – 22); measuring the amount of the image data stored in the storage medium (buffer memory – 22) until reaching a predetermined amount of data (determined by means of the lower – V1 and upper – V2 threshold values); and recording the image data being continuously stored in the storage medium (buffer memory – 22) into a non-volatile recording medium (recording medium – 26) during the step of storing in the storage medium each piece of image data continuously obtained by the image pickup operation (image sensor – 14) performed after reaching the predetermined amount of data.

7. For **claim 7**, Ogino discloses an image pickup apparatus (see figure 1) comprising: an optical lens (10); an image pickup device (image sensor – 14) for taking image through the optical lens (10); storage instructions device (memory control – 24) for storing image data continuously obtained by an image pickup operation of the image pickup device (image sensor – 14) in a storage medium (buffer memory – 22); record instructing device (I/F – 28) for allowing to record the image data from the storage medium (buffer memory – 22) to a non-volatile recording medium (recording medium – 26); measuring device (CPU – 30 by means of the lower – V1 and upper – V2 threshold values) for measuring of the amount of image data stored in the storage medium (buffer memory – 22) until reaching a predetermined amount of data; and parallel processing instruction device (CPU – 30), for instructing the record instructing means (I/F – 28) to record into a non-volatile recording medium (recording medium – 26) each piece of the image data being continuously stored in the storage medium (buffer memory – 22) during the

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storage operation of each piece of image data continuously obtained by the image pickup operation (image sensor – 14), after reaching the predetermined amount of data.

8. For **claim 13**, Ogino discloses an image pickup apparatus (see figure 1) where image data continuously obtained by an image pickup operation (image sensor – 14) are stored in a storage medium (buffer memory – 22) and the image data being stored in the storage medium (buffer memory – 22) are recorded into a non-volatile recording medium (recording medium – 26), the image pickup apparatus comprising: an optical lens (10); an image pickup device (14) for taking image through the optical lens (10); a controller (30) which is capable of performing the following operations;

- i) storing the image data continuously in the storage medium (buffer memory – 22);
- ii) measuring (CPU – 30 by means of the lower – V1 and upper – V2 threshold values) the amount of the image data stored in the storage medium (buffer memory – 22) until reaching a predetermined amount of data;
- iii) recording each piece of the image data being continuously stored in the storage medium (buffer memory – 22) into the recording medium (recording medium – 26), during the operation of storing each piece of image data continuously obtained by the image pickup operation (image sensor – 14), after reaching the predetermined amount of data.

9. For **claim 19**, Ogino discloses a method for recording image (see figure 2), comprising the steps of storing image data continuously obtained by an image pickup operation (within image sensor – 14) in a storage medium (buffer memory – 22); counting the number of images of the image data stored in the storage medium (buffer memory – 22) until reaching a

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predetermined number (the buffer memory – 22 has a capacity of 8 image frames and the once it is determined that the buffer memory – 22 has reached capacity, the digital images are transferred to the recording memory – 26; thus, the digital images must be counted); and recording each piece of the image data being continuously stored in the storage medium (buffer memory – 22) into a non-volatile recording medium (recording medium – 26) during the step of storing in the storage medium each piece of image data continuously obtained by the image pickup operation (image sensor – 14) performed after reaching the predetermined number.

10. For **claim 22**, Ogino discloses an image pickup apparatus (see figure 1) comprising: an optical lens (10); an image pickup device (image sensor – 14) for taking image through the optical lens (10); storage instructions device (memory control – 24) for storing image data continuously obtained by an image pickup operation of the image pickup device (image sensor – 14) in a storage medium (buffer memory – 22); record instructing device (I/F – 28) for allowing to record the image data from the storage medium (buffer memory – 22) to a non-volatile recording medium (recording medium – 26); measuring device (memory control – 24) for counting the number of images of the image data stored in the storage medium (buffer memory – 22) until reaching a predetermined number (the buffer memory – 22 has a capacity of 8 image frames and the once it is determined that the buffer memory – 22 has reached capacity, the digital images are transferred to the recording memory – 26; thus, the digital images must be counted); and parallel processing instruction device (CPU – 30), for instructing the record instructing means (I/F – 28) to record into a non-volatile recording medium (recording medium – 26) each piece of the image data being continuously stored in the storage medium (buffer memory – 22) during the storage operation of each piece of image data continuously obtained by

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the image pickup operation (image sensor – 14), after reaching the predetermined amount of data.

11. For **claim 25**, Ogino discloses an image pickup apparatus (see figure 1) where image data continuously obtained by an image pickup operation (image sensor – 14) are stored in a storage medium (buffer memory – 22) and the image data being stored in the storage medium (buffer memory – 22) are recorded into a non-volatile recording medium (recording medium – 26), the image pickup apparatus comprising: an optical lens (10); an image pickup device (14) for taking image through the optical lens (10); a controller (30) which is capable of performing the following operations;

- i) storing the image data continuously in the storage medium (buffer memory – 22);
- ii) counting the number of images of the image data stored in the storage medium (buffer memory – 22) until reaching a predetermined number (the buffer memory – 22 has a capacity of 8 image frames and the once it is determined that the buffer memory – 22 has reached capacity, the digital images are transferred to the recording memory – 26; thus, the digital images must be counted);
- iii) recording each piece of the image data being continuously stored in the storage medium (buffer memory – 22) into the recording medium (recording medium – 26), during the operation of storing each piece of image data continuously obtained by the image pickup operation (image sensor – 14), after reaching the predetermined amount of data.

12. As for **claims 3, 9, 15, 21, 24, and 27**, Ogino discloses converting an image signal obtained by the image pickup operation (14) to digital image data in units of image frames (S/H

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– 16 and A/D – 18); and compressing (record processing – 20) the image data the image data before storing in the storage medium (recording medium – 26).

13. As for **claims 4, 10, and 16**, since Ogino discloses a continuous shot mode, it is inherent to Ogino that image data are compressed according to a motion picture compression form.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. **Claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino in view of Anderson et al.

16. As for **claims 2, 8, 14, 20, 23, and 26**, Ogino discloses a storage medium (22) for storing image data continuously obtained by an image pickup operation (14) and a non-volatile recording medium (26) for recording the image data being stored in the storage medium (22). However, Ogino does not disclose storing in the storage medium (22) storage information including a start address and data length of the image data being stored in the storage medium (22) and recording the image data being stored in the storage medium (22) to the recording medium based on the storage information (26).

Anderson et al. also disclose, as shown in figures 2 – 4 and as stated in columns 3 (lines 54 – 64), 4 (lines 1 – 12, 21 – 25, and 41 – 67), and 5 (lines 1 – 48), a storage medium (RAM 60) and a non-volatile recording medium (Flash Memory 64) for storing image data. Anderson et al.

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disclose storing in the storage medium (60) storage information (in Data Cells 76) including a start address and data length (through the use of “pointers”) of the image data being stored in the storage medium and recording the image data being stored in the storage medium to the recording medium based on the storage information (processing requests and “Compressed Image Data in Flash Memory” flags). As stated in column 2 (lines 18 – 29), at the time the invention was made, one with ordinary skill in the art would have been motivated to have stored storage information in the storage medium, including a start address and data length of the image data being stored in the storage medium, and recording the image data being stored in the storage medium to the recording medium based on the storage information as taught by Anderson et al. in the storage medium of Ogino as a means to maintain the storage medium in a condition to receive new image data from the imaging device. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have stored storage information in the storage medium as taught by Anderson et al. in the storage medium of Ogino.

17. As for **claims 5, 11, and 17**, Ogino discloses converting an image signal obtained by the image pickup operation (14) to digital image data in units of image frames (S/H – 16 and A/D – 18); and compressing (record processing – 20) the image data the image data before storing in the storage medium (recording medium – 26).

18. As for **claims 6, 12, and 18**, since Ogino discloses a continuous shot mode, it is inherent to Ogino that image data are compressed according to a motion picture compression form.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The examiner can normally be reached on Monday - Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703.306.0377.

JPM

DECEMBER 17, 2003


NGOC-YEN VU
PRIMARY EXAMINER